PROJECT NUMBER: 1307

PROJECT TITLE : Reconstituted Tobacco Development

PERIOD COVERED: August 1-31, 1984

PROJECT LEADER: R. G. Uhl

I. IMPROVED SHEET PROPERTIES (R. M. Rogers)

A. Objective

Improve the physical characteristics and blend performance of reconstituted sheet.

B. Status

1. Survivability studies of chemically traced Park 500 and pilot sheets show a definite increase in RL piece size at the maker exit as sheet tensile strength is increased. This was primarily determined by TiO_2 tracer analysis of sieve fractions, but was confirmed by analysis for paraben co-tracers, picking of sieve fractions and higher longs content in the actual ripped cigarettes. RL shred size distribution in 17% and 50% blends was surprisingly close to 100% RL results, indicating little in the way of synergistic effects.

2. Separate R&D and Park 500 evaluation of test sheets from pilot plant processing of Park 500 stock showed the same progression of tensile values for the eight tests. Reducing headbox consistency without additional refining gave no benefit due to formation defects from flocculation of the long stock. When additional refining was also utilized there was a definite improvement in tensile values (>50%). Data analysis indicates that large unrefined fibers have a considerable detrimental effect on tensile values. Fines have a minor effect, essentially acting as a filler to dilute tensile strength. Pilot processed sheets also show tensile correlation with basis weight.

C. Plans

Conduct an extended pilot run with Park 500 stock at best process conditions and evaluate product for survivability and effect on cigarette properties.

II. SUBJECTIVE MODIFICATION OF RL (R. Ellis)

A. Objective

Improve or modify the subjective character of RL.

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B. Status

1. Subjective evaluation of up to 4% menthol CT in pilot RLTC and 150B showed no significant difference from control blend. However, the CT utilized was low in menthol (2300 vs 4500 ppm average, 6500 ppm max). Therefore, this testing only qualifies 2% usage of mentholated CT with a normal menthol content.

2. Cigarettes containing RL/RCB sheet made at high DAP levels, etc., have been submitted to the large Flavor Development Panel for clarification of preliminary results. Other models are in testing to determine the effect of sugar level and establish the equivalence of DAP spraying vs size addition.

3. The best RL/RCB variants (both CEL cooks and precooked flavors) have been made into cigarettes using the same master strip batch for head-to-head comparison. These include 7% models replacing RCB.

4. While RL/RCB provides RCB flavor notes it retains some characteristic RL qualities, resulting in a product that is more like a blend of the two production sheets. An approach is being formulated to determine what blend it may be equivalent to.

C. Plans

Expedite comparison of the two RL/RCB approaches, optimize precook flavor and DAP levels in the precooked variant, and initiate determination of RL/RCB equivalency to blends of RL and RCB.

III. RL COATER DEVELOPMENT (R. M. Rogers)

A. Objective

Develop a process for the application of class tobaccos to RL utilizing coating technology.

B. Status

1. Coated and sized RLTC made for external panel tests meet specifications and are being subjectively screened.

2. The PM Engineering Conditioner Group has improved coated RL unpacking by using 4-5 conditioner cycles while pulsing conditioner vacuum/pressure to loosen the tobacco. Pad counts for coated sheet are down to 2-4% compared to 0.6% for Park 500 sized sheet. All pads are relatively small (no tombstones) and should eventually break-up if recycled.

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C. Plans

Expedite panel testing of coated vs sized sheet. Produce RL coated with RCB slurry for subjective evaluation.

IV. RCB (R. Ellis)

A. Objective

Develop and evaluate process and product improvements for cast sheets.

B. Status

1. Comparison of U.S. and Venezuelan (BATANA) RCB was completed. The BATANA product is higher in solubles but contains less humectant and equilibrates at a lower OV. Equilibrated CV is also lower as measured, but is equivalent when corrected to an equal fiber basis.

2. RCB handsheets of black tobacco byproducts were made for subjective evaluation by TTG. Other handsheets were made for simulated storage studies of RCB and TMCI materials.

3. Several RCB test runs were conducted on the pilot Sandvik system. Problems center on steam line pluggage in the dryer section, single pass refining and controlling coating weight at the very low line speeds.

C. Plans

Continue debugging the pilot coater/belt system.

R. L. Ehl

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